BY EMAIL ONLY

Office of The Ombudsman
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10 June 2022

Dear Sir / Madam,

Views on Ombudsman's Direct Investigation to Examine the Government's Enforcement Against Defective Sewage Works of New Territories Exempted Houses (NTEHs)

1. The problem of defective sewage works and illegal sewage discharge from NTEHs, which is intensified by ineffective law enforcement, has long been a threat to our river ecosystems and public health. The problem extends far beyond rivers as pollutants and pathogens contaminate seafood and come into contact with beach-goers when rivers flow into the sea. We appreciate the Office's initiative to start the entitled investigation and would like to provide the following comments based on our long-term observation in rural areas sitting on the flood plain of Tung Chung River (TCR), which is highly ecologically important and deserves timely protection.

2. Often referred to as the "last remaining large-scale natural river in Hong Kong", TCR is mostly pristine from its sources to its estuary and bay. The East and West Streams are highly biodiverse, each having a section designated as Ecologically Important Stream (no. 27) by the Agriculture, Fisheries and Conservation Department. Together with the estuary, different sections of TCR are home to many important species, and TCR has been regarded as the second richest in freshwater fish diversity within the territory (Chong & Dudgeon 1992). The water quality of Tung Chung River has also been rated as "Excellent" between 1999 and 2019 under the grading scheme of Water Quality Index (WQI) with remarkably low levels of *E. coli* among local rivers (EPD 2020). However, signs of deterioration in water and habitat qualities (e.g. significant increase in counts of *E. coli* in stream water in the past decade, EPD 2022) have been detected as village development expands within its valley, and is accelerated by the Tung Chung New Town Extension (TCNTE) program which indirectly encourages further encroachment of NTEHs into the river's riparia.

3. Although sewage discharge into inland waters (including natural and artificial channels) is an offence under the Water Pollution Control Ordinance (Cap. 358), the illegal connection of domestic sewage pipes from NTEHs to receivers, including storm drains and natural

streams, is extremely common. Storm drains, assumed to collect "clean" rainwater from urban and village areas, have proven to be regular point sources of effluent. Discharge of a storm drain into the East Stream of TCR near Shek Mun Kap village (Fig. 1), for example, had levels of ammonia-nitrogen violating EPD's inland water effluent discharge standards in up to 100% of all surveyed occasions in a previous study (Green Power 2021). The exact sources of sewage may also be hard to trace visually, as pipes or ditches may go underground when being decked. However, the high level of ammonia-nitrogen is very likely attributable to the discharge of excreta via these channels and/or leakage from septic tanks and soak-away (STS) systems (see para. 4). Techniques such as Ground Penetrating Radar (GPR) should be explored and utilized by the authority when identifying and gathering evidence regarding the pollution sources.

4. Apart from the direct and intentional discharge of sewage into the above receivers, low compliance and ineffectiveness of STS systems also need to be addressed. STS systems are the only way of sewage treatment in village areas within TCR Valley (Tung Chung Valley Outline Zoning Plan Explanatory Statement, Section 9.3.6), as in many other rural areas in Hong Kong (Audit Commisson 2016). Such systems, however, have been proven to be ineffective and prone to leakage in floodplains (Audit Commisson 2016) where water tables are high (Toor et al. 2011), and leakage is common yet hard to detect, and enforcement against pollution caused by such leakage is difficult (Audit Commisson 2016). A walk-through survey of outfalls along lower sections of the East and West Streams was attempted (Green Power 2021), yet distinct outfalls were not located along all sections with signs of pollution. This may be a result of surface runoff from nearby farmlands, or more likely the leakage of STS systems from nearby village houses. The leakage of STS systems should be tackled, such as through mandatory licensing of STS systems and frequent active inspection by EPD on private premises suspected to be pollution sources.

5. Apart from intentional avoidance of responsibility by NTEH owners, the general public's weak awareness of the condition of sewage systems they are utilizing and how the failure of these systems affects nearby natural water courses may also be reasons why these problems prevail. A recent questionnaire survey conducted by tertiary students on Lam Tsuen River Valley villagers, who are living in the Water Supplies Department's water gathering ground, revealed that near 30% of the respondents were not sure about the type of sewage systems they were using (i.e. STS systems or connection to public sewers), let alone the conditions of such systems (HKBU CIE & Green Power 2022). Half of the respondents thought their daily activities would not cause any impact on Lam Tsuen River (HKBU CIE & Green Power 2022). Such results likely reflect rural residents' general understanding of the issue the Office is investigating. While government departments need to improve the efficiency and effectiveness of law enforcement, encouragement and provision of initiatives for the general public, especially NTEH residents (including NTEH owners and tenants), to engage in general improvement of the sewage systems they are using and the surveillance and report of suspected illegal sewage discharge around their neighbourhood may also be a solution.

6. Since the announcement and progression of TCNTE, new NTEHs are being built at an escalated rate within TCR Valley, many of which are located at extremely short distances from the river. Without timely provision of and effectively monitored connection to public sewers, these new NTEHs pose tremendous threats to this water sensitive receiver. With the clear goal of conserving TCR, and a River Park which promotes the "water-friendly" culture to be located immediately downstream of pollution sources under the TCNTE, the rectification of sewage discharge from NTEHs is essential. We sincerely hope the investigation can provide corresponding recommendations which protect TCR's pristine water quality that forms the basis of biodiversity conservation of this fragile river system and safeguard public health for residents of the valley and visitors of the River Park.

Thank you very much for your kind attention. For further inquiries, please contact the undersigned at Green Power (Tel: 3961 0207, Fax: 2384 4204, Email: elaine@greenpower.org.hk).

Yours faithfully,

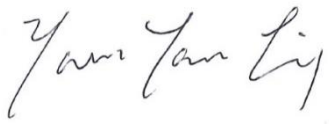

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Figure 1. Sewage draining into the East Stream of Tung Chung River via an outfall of a storm drain near Shek Mun Kap Village.

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